

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (Currently amended): An homogeniser for comminuting a sample of material comprising a container (1), and a grinder (20), wherein

the container (1) comprises an interior (2) defined by sidewalls (3), an upper portion (4) having an upwardly open top communicable with an exterior of the container, and an interior bottom (5), and

the grinder (20) comprises

(i) a hollow shaft (22) locatable within the container, the hollow shaft (22) defining an interior channel (23),

(ii) a grinding head (21) defining a closed ~~provided at one~~ end of the shaft (22),

(iii) at least one port (24) located on the elongate sides of the shaft (22) said port being dimensioned so that only comminuted material may flow into the interior channel (23), of the shaft (22).

Claim 2-64 (canceled)

Claim 65 (New): An homogeniser as claimed in claim 1 wherein the grinding head (21) comprises at least one blade.

Claim 66 (New): An homogeniser as claimed in claim 1 or 65 wherein the grinding head (21) is shaped to compliment the shape of the interior bottom (5).

Claim 67 (New): An homogeniser as claimed in claim 66 wherein the shape is substantially flat.

Claim 68 (New): An homogeniser as claimed in claim 1 wherein the interior bottom (5) and the grinding head (21) each comprise a sample-engaging surface.

Claim 69 (New): An homogeniser as claimed in claim 68 wherein at least one of the sample-engaging surfaces is an abrasive surface.

Claim 70 (New): An homogeniser as claimed in claim 1 wherein the port (24) comprises a slit formed in the shaft (22).

Claim 71 (New): An homogeniser as claimed in claim 1 wherein the port (24) is positioned on the shaft (22) proximate to the grinding head (21).

Claim 72 (New): An homogeniser as claimed in claim 1 wherein there is provided a means to reversibly close the at least one port (24).

Claim 73 (New): An homogeniser as claimed in claim 1 wherein the at least one port (24) is positioned on the shaft (22) such that when the apparatus is used in combination with a defined volume of a solution separable into at least two layers defined by differing density gradients, the positioning of the at least one port permits egress of at least one of the layers into the interior channel (23) and permits the prevention of egress of at least one of the layers into the interior channel (23).

Claim 74 (New): An homogeniser as claimed in claim 1 wherein an upper portion (26) of the shaft (22) is provided with an engagement means (201), the engagement means (201) providing a means of detachably engaging the shaft (22) with a rotation device (203), or a rotation device adaptor, or a closure means (204).

Claim 75 (New): An homogeniser as claimed in claim 1 wherein the shaft (22) further comprises a biasing means for biasing the grinding head (21) against the interior bottom (5) of the container (1).

Claim 76 (New): An homogeniser as claimed in claim 1 wherein the grinder (20) can nest within the container (1), such that the grinding head (21) is proximate to the interior bottom (5), and a sample of comminutable material can be contained between the grinding head (21) and the interior bottom (5), and movement of the grinder (20) relative to the container results in the sample of material being comminuted.

Claim 77 (New): An homogeniser as claimed in claim 76 wherein the grinder (20) is moveable in at least one direction chosen from rotational movement and movement in a direction substantially parallel to the central axis (A).

Claim 78 (New): An homogeniser as claimed in claim 1 further comprising a cap (10), wherein the cap (10) comprises a roof portion (15) and an outer skirt (14) engagable with the upper portion of the container (4) and the roof portion (15) further comprises an aperture (11) adapted to permit the shaft (22) of the grinder (20) to protrude through the aperture (11).

Claim 79 (New): An homogeniser as claimed in claim 78 further comprising a shaft engaging means and a portion of the shaft (22) is dimensioned to be engagable with the shaft engaging means.

Claim 80 (New): An homogeniser as claimed in claim 78 wherein the shaft (22) is provided with a restraining means to limit the movement of the shaft (22) through the aperture (11).

Claim 81 (New): An homogeniser as claimed in claim 1 wherein at least one portion of the homogeniser is composed of, impregnated with, or coated with a reactive material selected to react with a moiety intended for use within the homogeniser.

Claim 82 (New): An homogeniser as claimed in claim 1 further comprising a means to aspirate the comminuted material from the interior channel (23).

Claim 83 (New): An homogeniser as claimed in claim 1 further comprising a holding device.

Claim 84 (New): An homogeniser as claimed in claim 83 wherein the container further comprises a positioning means engagable with the holding device, such that the positioning means permits the container (1) to be engaged in a specific orientation relative to the holding device.

Claim 85 (New): An homogeniser as claimed in claim 1 further comprising a rotation device.

Claim 86 (New): An homogeniser for homogenising a sample of material comprising a grinder (20), wherein the grinder (20) comprises

- (i) a hollow shaft (22) having an interior channel (23),
- (ii) a grinding head (21) defining a closed end of the shaft (22),
- (iii) at least one port (24) located on the elongate side of the shaft (22) said port being dimensioned so that only homogenised material may flow into the interior channel (23) of the shaft (22).

Claim 87 (New): An homogeniser for comminuting a sample of material comprising a container (1), and a grinder (20), wherein

the container (1) comprises an interior (2) defined by sidewalls (3), an upper portion (4) having an upwardly open top communicable with an exterior of the container, and an interior bottom (5), and

the grinder (20) comprises

- (i) a hollow shaft (22) locatable within the container, the hollow shaft (22) defining an interior channel (23),
- (ii) a grinding head (21) provided at one end of the shaft (22),

(iii) at least one port (24) through which comminuted material may flow into the interior channel (23) of the shaft (22), positioned on the shaft (22) such that when the apparatus is used in combination with a defined volume of a solution separable into at least two layers defined by differing density gradients, the positioning of the at least one port permits egress of at least one of the layers into the interior space (23) and permits the prevention of egress of at least one of the layers into the interior space (23).

Claim 88 (New): A kit for homogenising a sample of material comprising at least one homogeniser as claimed in any one of claims 1, 86 or 87 and optionally further comprising at least one of the group consisting of a rotation device, a rotation device adapter, a closure means or a holding device.

Claim 89 (New): A method for homogenising a sample of material comprising the use of an homogeniser as claimed in claim 1, 86 or 87, and

- (i) placing the sample to be homogenised within the interior (2) of the container (1) such that it can be retained by the interior bottom (5),
- (ii) inserting the shaft (20) into the interior (2) such that the grinding head is contactable with the sample,
- (iii) placing a cap (10) on the container (1) such that the upper portion (26) of the shaft (22) extends through an aperture in the cap adapted to permit the shaft (22) of the grinder (20) to protrude through the aperture (11),
- (iv) engaging the engagement means (201) with the rotation device and optionally securably restraining the rotational movement of the container (1) relative to the shaft (22) optionally by means of the holding device.
- (v) homogenising the sample material by means of movement of the shaft (22) relative to the container (1),
- (vi) removing homogenised material from the interior of the container (1) into the interior channel (23) of the shaft (22) by means of at least one port (24).